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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,601	08/08/2001	Shang-Jen Ko	13989	5256

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GARDEN CITY, NY 11530

EXAMINER

LY, ANH

ART UNIT	PAPER NUMBER
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2172

DATE MAILED: 02/03/2004

3

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/924,601

Applicant(s)

KO, SHANG-JEN

Examiner

Anh Ly

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2 &amp; 08/08/2001</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This Office Action is response to Applicant's communications filed on 08/08/2001.

2. Claims 1-24 are pending in this application.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-2, 5-6, 7-8, 11-12, 13-14, 17-18, 19-20 and 23-24 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,121,901 issued to Welch et al. (hereinafter Welch).

With respect to claim 1, Welch discloses storage means for storing strings of the data signals encountered in said stream of data signals in a dictionary, said stored strings each having a corresponding code signal associated therewith (dictionary is

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used to store string of the data signals: see fig. 1 and fig. 2, col. 3, lines 48-60, col. 4, lines 52-67 and col. 5, lines 1-3 and lines 50-62);

means for searching said stream of data signals by comparing said stream to lo said stored strings to determine the longest match therewith (searching the string stored in the dictionary until the longest match is found: col. 4, lines 32-36);

means for searching said remaining stream of data signals by comparing said remaining stream to said stored strings to determine the longest match therewith (the searching and comparing the input or current string with of string stored in dictionary: col. 1, lines 40-52, col. 8, lines 66-67 and col. 9, lines 1-16);

means for inserting into said dictionary, for storage therein, an extended string comprising said longest match with said stream of data signals extended by said longest match with said remaining stream of said data signals (the input string is inserted into dictionary: col. 4, lines 32-51 and col. 5, lines 50-62);

and means for assigning a code signal corresponding to said stored extended string (assigning the code and storing the string, the process is repeated as shown in the figs. 1, 2, and 8, col. 5, lines 50-67 and col. 6, lines 45-58).

With respect to claim 2, Welch discloses further means for repeating the compression of said stream for all of the data signals therein (col. 5, lines 50-67 and col. 6, lines 45-58; also see col. 3, lines 48-55 and col. 4, lines 52-58).

With respect to claim 5, Welch discloses means for predefining coding signals based on the type of data signals being compressed (col. 1, lines 52-65, col. 14, lines 57-67 and col. 15, lines 1-5).

With respect to claim 6, Welch discloses wherein the coding signals are predefined as varying length zero coding signals (col. 2, lines 18-25).

Claim 7 is essentially the same as claim 1 except that it is directed to a method rather than an apparatus, and is rejected for the same reason as applied to the claim 1 hereinabove.

Claim 8 is essentially the same as claim 2 except that it is directed to a method rather than an apparatus, and is rejected for the same reason as applied to the claim 2 hereinabove.

Claim 11 is essentially the same as claim 5 except that it is directed to a method rather than an apparatus, and is rejected for the same reason as applied to the claim 5 hereinabove.

Claim 12 is essentially the same as claim 6 except that it is directed to a method rather than an apparatus, and is rejected for the same reason as applied to the claim 6 hereinabove.

Claim 13 is essentially the same as claim 1 except that it is directed to a program storage device rather than an apparatus, and is rejected for the same reason as applied to the claim 1 hereinabove.

Claim 14 is essentially the same as claim 2 except that it is directed to a program storage device rather than an apparatus, and is rejected for the same reason as applied to the claim 2 hereinabove.

Claim 17 is essentially the same as claim 5 except that it is directed to a program storage device rather than an apparatus, and is rejected for the same reason as applied to the claim 5 hereinabove.

Claim 18 is essentially the same as claim 6 except that it is directed to a program storage device rather than an apparatus, and is rejected for the same reason as applied to the claim 6 hereinabove.

Claim 19 is essentially the same as claim 1 except that it is directed to a computer program product rather than an apparatus, and is rejected for the same reason as applied to the claim 1 hereinabove.

Claim 20 is essentially the same as claim 2 except that it is directed to a computer program product rather than an apparatus, and is rejected for the same reason as applied to the claim 2 hereinabove.

Claim 23 is essentially the same as claim 5 except that it is directed to a computer program product rather than an apparatus, and is rejected for the same reason as applied to the claim 5 hereinabove.

Claim 24 is essentially the same as claim 6 except that it is directed to a computer program product rather than an apparatus, and is rejected for the same reason as applied to the claim 6 hereinabove.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-4, 9-10, 15-16 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,121,901 issued to Welch et al. (hereinafter Welch) in view of US Patent No. 6,606,040 issued to Abdat.

With respect to claims 3-4, Welch discloses an apparatus for compressing a stream of data signals as discussed in claim 1.

Welch discloses a stream of data or string entering into the compression dictionary as each input character is read and matched. When a longest match is achieved: searching the dictionary for the longest matched string and an output symbol is determined. Welch does not teach means for determining if said dictionary is full; and means for changing a coding size of said coding signals based on the determination of whether the dictionary is full.

However, Abdat discloses monitoring the number of entries to determine if the dictionary is full and the size of code table (see fig. 3 and col. 8, lines 38-47 and col. 5, lines 36-58 and col. 9, lines 63-67 and col. 10, lines 1-4).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Welch with the teachings of Abdat so as to obtain a way of determination of whether the dictionary is full and a coding size table (col. 8, lines 38-47 and see fig. 3 and col. 5, lines 36-58). This combination would have made an apparatus for searching and comparing stream of data to get the longest match from the dictionary where the string is stored and updating the input data character and it is ended when the input character have matched the longest string in the dictionary (Welch – col. 2, lines 26-56).

Claims 9-10 are essentially the same as claims 3-4 except that they are directed to a method rather than an apparatus, and are rejected for the same reason as applied to the claims 3-4 hereinabove.

Claims 15-16 are essentially the same as claims 3-4 except that they are directed to a program storage device rather than an apparatus, and are rejected for the same reason as applied to the claims 3-4 hereinabove.

Claims 21-22 are essentially the same as claims 3-4 except that they are directed to a computer program product rather than an apparatus, and are rejected for the same reason as applied to the claims 3-4 hereinabove.



**Contact Information**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh Ly whose telephone number is 703 306-4527 or via E-Mail: ANH.LY@USPTO.GOV. The examiner can normally be reached on 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene, can be reached on 703 305-9790. The fax phone number for the organization where this application or proceeding is assigned is 703 746-7239.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks


Washington, D.C. 20231

or faxed to: Central Office (703) 872-9306 (Central Official Fax Number)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Fourth Floor (receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-6606 or 703 305-3900.

AL  
JAN. 30<sup>th</sup>, 2004

  
JEAN M. CORRIELUS  
PRIMARY EXAMINER